

Claims

WHAT IS CLAIMED IS:

1. A method for providing a zoom video tracking image, comprising steps of:
beginning a zoom mode;
identifying a first portion of an image;
displaying the first portion;
detecting motion of an object within the portion of the image;
selecting a second portion of the image such that the object appears at least a predetermined distance from an edge of the second portion of the image; and
displaying the second portion.
2. The method of claim 1, further comprising a step of:
when at least one edge of the second portion of the image extends beyond the image, terminating the zoom mode.
3. The method of claim 1, further comprising steps of:
measuring a difference between the first portion of the image and the second portion of the image; and
when the difference between the first portion of the image and the second portion of the image exceeds a predetermined threshold, terminating the zoom mode.
4. The method of claim 1, wherein the first portion of the image and the second portion of the image are MPEG2 images; and wherein the step of detecting motion of an object within the portion of the image includes a step of examining MPEG2 motion vectors.

8. A method for providing a zoom video tracking image, comprising steps of:
beginning a zoom mode;
identifying a first portion of an image;
displaying the first portion in a zoom frame within a full frame of the image;
detecting motion of an object within the zoom frame;
selecting a second portion of the image such that the object appears at least a predetermined distance from an edge of the second portion of the image; and
displaying the second portion in the zoom frame.
9. The method of claim 8, further comprising a step of, when at least one edge of the second portion of the image extends beyond the image, terminating the zoom mode.
10. The method of claim 8, further comprising steps of:
measuring a difference between the first portion of the image and the second portion of the image; and
when the difference between the first portion of the image and the second portion of the image exceeds a predetermined threshold, terminating the zoom mode.
11. The method of claim 8, wherein the first portion of the image and the second portion of the image are MPEG2 images; and wherein the detecting motion of an object within the portion of the image includes a step of examining MPEG2 motion vectors.
12. The method of claim 11, wherein, during panning of the image, objects within the image have larger MPEG2 motion vectors than an MPEG2 motion vector of the object within the first portion of the image, and wherein in the step of examining MPEG2 motion vectors, a compensated MPEG2 motion vector for objects in the first portion of the image is determined by eliminating an MPEG2 motion vector of the entire portion of the image taken as a whole from the MPEG2 motion vector of the object in the first portion of the image.

13. The method of claim 11, wherein, during panning of the image, objects within the image have larger MPEG2 motion vectors than an MPEG2 motion vector of the object within the first portion of the image, and wherein the step of examining MPEG2 motion vectors comprises determining that an object has a larger motion vector in one direction when observed in a full frame of the image, and has a smaller motion vector when observed in a zoom frame in order to identify panning of the image.

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14. A television system, comprising:
a tuner operative to receive a video image;
a video signal processor coupled to the tuner and operative to select a portion of a full frame of the video image to provide a selected portion of the video image;
the video processor also operative, while all edges of the selected portion of the video image are within the video image, to zoom to the selected portion of the video image and display in a zoom frame, to detect movement of an object within the selected portion of the video image, and to select a second portion of the video image to redefine the selected portion of the video image and display in the zoom frame.

15. The television system of claim 14, wherein the video signal processor is further operative to determine a difference between the first portion of the video image and the second portion of the video image, and to cancel zoom in response to the difference exceeding a predetermined threshold.

16. The television system of claim 14, wherein the first portion of the image and the second portion of the image are MPEG2 images; and wherein the video signal processor is further operative to detect motion of an object within the portion of the image by examining MPEG2 motion vectors.

17. The television system of claim 16, wherein, during panning of the image, objects within the image have larger MPEG2 motion vectors than an MPEG2 motion vector of the object within the first portion of the image, and wherein video signal processor is further operative to determine a compensated MPEG2 motion vector for objects in the first portion of the image by eliminating an MPEG2 motion vector of the entire portion of the image taken as a whole from the MPEG2 motion vector of the object in the first portion of the image.

18. The television system of claim 16, wherein, during panning of the image, objects within the image have larger MPEG2 motion vectors than an MPEG2 motion vector of the object within the first portion of the image, and wherein video signal processor is

